

What is claimed is:

1. A liquid crystal display device wherein a seal is disposed in a direction crossing electrode links connected to electrode lines within a picture display part of the liquid crystal display panel and electrode pads provided at the outside of the picture display part, said device comprising:

an organic protective film coated on a lower plate of the liquid crystal display panel, the organic protective film having a plurality of holes between the electrode links; and

an inorganic gate insulating film formed below the organic protective film and being in contact with the seal through the holes.

2. The liquid crystal display device as claimed in claim 1, wherein each of the electrode links is a data link for applying a data signal from the exterior thereof to a data line of the picture display part.

3. The liquid crystal display device as claimed in claim 1, wherein each of the electrode links is a gate link for applying a scanning signal from the exterior thereof to a gate line of the picture display part.

4. The liquid crystal display device as claimed in claim 1, wherein the holes are extended beyond an edge of the seal.

5. The liquid crystal display device as claimed in claim 1, wherein the gate insulating film is only partially removed to a predetermined thickness where the holes are formed.

6. The liquid crystal display device as claimed in claim 5, further comprising:

an etch point detection window formed at a desired area of a substrate provided with the lower plate of the liquid crystal display panel; and

a dummy pattern having the predetermined thickness below a portion of the gate insulating film within the etch point detection window.

7. A method of fabricating a liquid crystal display device wherein the devices includes gate electrode lines, electrode links and electrode pads within a picture display part of a liquid crystal display panel, a gate insulating film of an inorganic material on a substrate provided with the gate electrode lines, links and pads, forming data electrode lines, electrode links and electrode pads on the gate insulating film, an organic protective film on the gate insulating film provided with the data electrode lines, links and pads, and a seal crossing the gate and data electrode links on the organic protective film, said method comprising:

removing the protective film and partially removing the gate insulating film to a predetermined thickness to define holes between the gate electrode links and the data electrode links; and

contacting the seal with the gate insulating film through the holes.

8. The method as claimed in claim 7, wherein the protective film and the gate insulating film are continuously removed by the dry etching technique.

5

9. The method as claimed in claim 8, further comprising:

forming a dummy pattern having said predetermined thickness before forming the gate insulating film at a predetermined area of the substrate prior to the dry etching work;

forming an etch point detection window at an area provided with the dummy pattern; and

terminating the etching process when the dummy pattern has been exposed from the etch point detection window during the dry etching.

10. The method as claimed in claim 7, wherein the holes are extended into the outside of an area occupied by the seal.

11. The method as claimed in claim 9, wherein the terminating the etching process step comprises:

monitoring reactive gas generation; and

terminating when the reactive gas is no longer being generated.

12. A liquid crystal device, comprising:

an upper plate;

a lower plate structure having an inorganic layer and having at least one hole exposing a portion of said inorganic layer; and

5 a seal between said upper plate and said lower plate filling said hole to bond said upper and said lower plates.

13. The device of claim 12, wherein said lower plate comprises:

a lower glass substrate;

10 an inorganic gate insulation film formed on said lower glass substrate;  
and

an organic protective film on said inorganic gate insulation film.

14. The device of claim 13, wherein said inorganic surface portion is a  
15 surface portion of said glass substrate.

15. The device of claim 13, wherein said inorganic surface portion is a surface portion of said inorganic gate insulation film.

20 16. The device of claim 15, wherein said inorganic gate insulation film is etched to a predetermined thickness.

17. The device of claim 12, wherein said hole is formed in between successive electrode links.

18. The device of claim 17, wherein said electrode links are one of gate  
5 links and data links.

19. The device of claim 12, wherein said hole extends beyond an edge defined by said seal.

20. A lower plate of a liquid crystal device, comprising:  
a glass plate;  
a gate insulating film formed over said lower glass plate such that at least a portion of said gate insulating film defines an adherence surface;  
a protective film formed over said gate insulating film such that at least a  
15 portion of said adherence surface is exposed; and  
a seal formed over said gate insulating film and in contact with said adherence surface.

21. The lower plate of claim 20, wherein a portion of a surface of said  
20 glass plate is exposed through a hole defined in said gate insulating film such that said exposed portion of said glass plate becomes said adherence surface.

22. The lower plate of claim 20, further comprising:

a plurality of gate links formed between said lower glass plate and said gate insulation film.

5

23. The lower plate of claim 22, wherein said adherence surface is disposed between at least two adjacent gate links.

24. The lower plate of claim 20, further comprising:

a plurality of data links formed between said gate insulation film and said protective film.

10  
15  
20  
25  
30  
35  
40  
45  
50  
55  
60  
65  
70  
75  
80  
85  
90  
95  
100

25. The lower plate of claim 24, wherein said adherence surface is disposed between at least two adjacent data links.

26. The lower plate of claim 20, wherein said adherence surface extends beyond an edge of said seal.

27. The lower plate of claim 20, wherein said adherence surface is inorganic.

20

28. A method to form a lower plate of a liquid crystal device, the method comprising:

forming a glass plate;

forming a gate insulating film over said lower glass plate such that at least a portion of said gate insulating film defines an adherence surface;

forming a protective film over said gate insulating film such that at least a portion of said adherence surface is exposed; and

5 forming a seal over said gate insulating film to make contact with said adherence surface.

29. The method of claim 28, wherein said adherence surface is defined on said glass plate by forming at least one hole in said gate insulating film to expose at least a portion of a surface of said glass plate.

30. The method of claim 28, further comprising:

forming a plurality of gate links between said lower glass plate and said gate insulation film.

31. The method of claim 30, wherein said adherence surface is disposed between at least two adjacent gate links.

32. The method of claim 28, further comprising:

20 forming a plurality of data links between said gate insulation film and said protective film.

33. The method of claim 32, wherein said adherence surface is disposed between at least two adjacent data links.

34. The method of claim 28, wherein said adherence surface extends  
5 beyond an edge of said seal.

35. The method of claim 28, wherein said adherence surface is inorganic.

36. A method to control a thickness of a gate insulation film remaining  
10 after etching, the method comprising:

forming an etch point detection window such that a dummy pattern of a predetermined thickness is formed below said gate insulation film;

simultaneously etching said etch point detection window and an actual pattern area; and

15 terminating the etching process when said dummy pattern becomes exposed.

37. The method of claim 36, wherein said terminating step comprises:

20 monitoring said etch point detection window for generation of reactive gases; and

terminating said etching process when said generation of reactive gases falls to or below a predetermined level.